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Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337-5099

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Rebecca Hudson
Telephone: 757-824-1139
Rebecca.S.Hudson@nasa.gov

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NASA WALLOPS SCIENTISTS HEAD TO AFRICA TO STUDY BIRTH OF HURRICANES

NASA, the National Oceanic and Atmospheric Administration, (NOAA), universities and international agencies are working together to study how winds and dust conditions from Africa influence the birth of hurricanes in the Atlantic Ocean.

Scientists from NASA Goddard Space Flight Center's, Wallops Flight Facility are taking part in the month long effort off the West African coast. The research, part of the NASA African Monsoon Multidisciplinary Analysis (NAMMA), is taking place in the Cape Verde Islands from August 15 to mid-September. The Cape Verde Islands are located 350 miles off the coast of Senegal in West Africa.

The campaign is in collaboration with a much larger international mission, the African Monsoon Multidisciplinary Activities, aimed at improving the knowledge and understanding of the West African Monsoon. NASA's contribution to the larger project focuses on the evolution of the birth of tropical cyclones.

The major research topics of this mission examine the formation and evolution of tropical hurricanes in the eastern and central Atlantic Ocean and their impact on the east coast of the United States, the composition and structure of the Saharan Air Layer, and whether aerosols affect cloud precipitation and influence cyclone development. The Saharan Air Layer is a mass of very dry, often dusty air that forms over the Sahara Desert during the late spring, summer, and early fall and usually moves out over the tropical Atlantic Ocean.

NASA Wallops Flight Facility personnel also are traveling abroad to take part in the NAMMA mission. They will be using two weather radars to track easterly atmospheric waves moving across Africa, as well as studying the structure of the atmosphere by the use of radiosondes and have placed 30 rain gages throughout remote areas on the coast of West Africa.

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The NASA POLarimetric radar (NPOL) and Tropical Ocean-Global Atmosphere Radar (TOGA) will be tracking heavy convective thunderstorms and pressure waves as they move across Africa. NASA's DC-8 aircraft will be flown in coordination with these radars to measure various properties of the atmosphere.

Atmospheric readings also will be observed from radiosondes, a device flown on weather balloons. While climbing to altitude, the radiosondes will measure pressure, temperature, wind, and humidity. These radiosondes will be flown every four hours for 30 days. Frequent vertical measurements will contribute to the overall understanding of the formation of tropical cyclones. Also, a SNOW WHITE chilled mirror will be flown on a weather balloon once every evening. This chilled mirror measures relative humidity in the upper troposphere and enhances the overall series of relative humidity data.

The campaign will use extensive data from NASA's fleet of Earth observing satellites, including the Tropical Rainfall Measurement Mission, QuikScat, Aqua, and the recently-launched CloudSat and Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations, or Calipso.

There are approximately 60-70 African Easterly Waves annually; however, only 10 percent of these waves evolve into named Atlantic tropical systems. Most Atlantic-named storms, including last year's catastrophic Hurricane Katrina, can be traced to an African Easterly Wave.

For more information about NASA's hurricane research, visit:

http://www.nasa.gov/hurricane

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